

REMARKS

The Office Action dated October 19, 2006 has been carefully considered. Claims 1-11 are pending, claim 12 is withdrawn from consideration.

Claims 1, 2, 4-6, and 8-10 were rejected under 35 U.S.C. 103(a) as being unpatentable over Butterbach et al. (US 5,512,625) (US '625). Applicants traverse the rejection.

Independent claims 1 and 8 recite an outer layer material which has a hotmelt material preapplied to the back surface, wherein the hotmelt has (B) a tackifier resin having a softening point determined by the ring and ball method of not lower than 110°C. The Examiner conceded that US'625 does not teach a tackifier resin having a softening point determined by the ring and ball method of not lower than 110°C. The Examiner accommodated this defect by presuming the tackifier of US'625 *necessarily* had the softening point of not lower than 110°C. Evidence is herein presented to rebut that presumption. The tackifier that is used in US'625 in all the Examples is Dertophene T 105 (*see* Examples 1-4 displayed in Tables 1 and 2, at Cols. 5 and 6). Presented as Exhibit 1 is a datasheet of Dertophene T terpene phenolic resins. According to the Dertopene datasheet, Dertophene T 105 has a softening point by the Ring and Ball method of 105°C. Therefore, US'625 fails to teach a hotmelt meeting all the limitations of the hotmelt recited in claims 1 and 8 and the Examiner failed to provide any teaching, suggestion, or motivation for modifying the teachings of US'625 to cure the defect.

Furthermore, it would not have been obvious to one of skill in the art to have modified the tackifier resin of US'625. The present inventors determined through experiment that tackifier having lower softening points render the hotmelt deficient in heat resistance and creep. (*see, e.g.* Control 1, p. 21, line 20 to p. 22, line 2). The beneficial properties of the inventive hotmelt over the prior art was unexpected. For this reason, independent claims 1 and 8, and all claims dependent therefrom are patentable over the US'625 reference. Applicant respectfully requests that the rejection be reconsidered and withdrawn.

Claims 1, 3, 6-8, and 11 were rejected under 35 U.S.C. 103(a) as being unpatentable over Haardt et al. (US 5,180,628) (US '628) in view of Butterbach et al. (US 5,512,625) (US '625). Applicants traverse the rejection.

The Examiner conceded that the second reference, US'628, does not teach a hotmelt having the claimed components or weight ratio. The Examiner relied on the combination of the teachings of US '628 with US '625 to arrive at the claimed invention with a hotmelt as in independent claims 1 and 8. However, as explained above, the hotmelt of US'625 is lacking in teaching the critical component of a tackifier resin having a softening point determined by the ring and ball method of not lower than 110°C. Thus the combined references did not teach, suggest or motivate one skilled in the art to modify the combination in the manner of the recited claims.

Still further, US'625 discloses that "Waxes are added as nucleating agents to influence viscosity and open time, but above all to improve crystallization." (Col. 3, lines 19-21). For this purpose, the waxes are incorporated into the hotmelt adhesive in an amount of 0 to 5 and preferably 2 to 3 parts by weight, based on 100 parts by weight of polymer blend. (Col. 3, lines 40-45). In US'625, the amorphous poly(α -olefin) is used at 35-45% by weight. (Col. 3, lines 32-35). In contrast, claim 1 of the claimed invention requires a much larger percentage of polypropylene wax. The claimed invention recites that the weight ratio of (A) amorphous poly(α -olefin) to (C) polypropylene wax is 100/50 -100/100. Thus, US '625 fails to teach the claimed ratio of (A) to (C) components. The Examiner proposed that it would have been obvious to one in the art at the time the invention was made to choose the claimed weight ratio motivated by the desire to increase the tackiness of the hot melt composition (Off. Act., page. 4). However, the Examiner's rationale is contradicted by the prior art reference, itself. US'625 teaches that in order to increase tackiness of the hotmelt and to increase adhesion, one adds *tackifying resin*, not polypropylene wax. Waxes are added merely to influence viscosity and open time and most importantly to improve crystallization. (Col. 3, lines 11-21). Thus, one of ordinary skill in the art, wanting to improve tackiness, would not have been motivated to try the component ratio that is used in the claimed invention, with high percentage of polypropylene

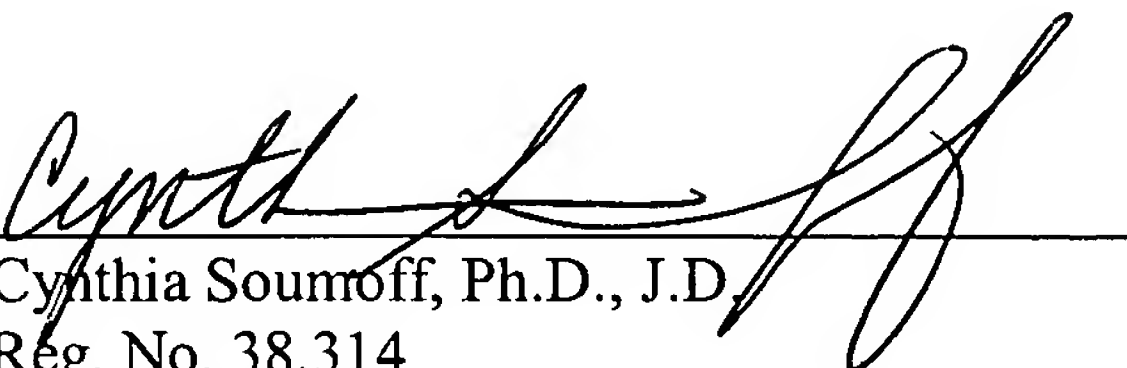
wax. US'625 teaches an entirely different pathway to attaining tackiness of the hotmelt. Therefore, the claimed invention is not obvious over the prior art.

The difference in the ratios between the claimed invention and US'625 is based on the fact that the waxes are added for very different purposes. The purpose of the incorporation of waxes into the hotmelt adhesive resides in the control of solidifying time by controlling decreasing viscosity, because of low molecular weight and crystallinity of the composition. The inventors found that when waxes are incorporated into the adhesive in other than a small amount, it influences the properties of the hotmelt. For example, when a small amount is used, the hotmelt becomes fragile because of low molecular weight, adhesiveness decreases, and creep property decreases. When a large amount of wax is incorporated, the properties change. According to the working examples of the present invention, the hotmelt showed good adhesive property to the polypropylene plate from the beginning and acquired a high resistance to heat (*see, e.g.*, Example 1 at p. 17, lines 23-25 vs any of the controls). On the contrary, US'625 do not teach such properties and the US'628 adhesive showed poor properties in this regard. Fast adhesive time is a property displayed by the presently claimed hotmelt. It saves on production time and improves productivity. Thus this unexpected result provides that the claimed invention is patentable over the prior art. For this reason, Applicants respectfully request that the rejection be reconsidered and withdrawn.

In view of the foregoing, Applicants submit that all pending claims are in condition for allowance and request that all claims be allowed. The Examiner is invited to contact the undersigned should he believe that this would expedite prosecution of this application. It is believed that no fee is required. The Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 13-2165.

Respectfully submitted,

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Exhibit 1

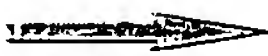
Applicant(s): KAKINUMA et al.

Filing Date: 03/03/2004

Serial No.: 10/792,072

Docket No.: 4296-171 US


Exhibit 1

(Exhibit 1 is on the reverse side of this sheet )

Product lines

Terpene phenolic resins**DERTOPHENE**

Do you have a problem in adhesion ? Think **DERTOPHENE** !

See
production
flow chart 



Our terpene phenolic resins are based on an original DRT process specifically designed to improve the adhesion on various substrates when included in an adhesive formulation.

Our first production grade, **DERTOPHENE T**, has now been successfully used for more than 25 years in hot melt adhesives for packaging and bookbinding applications, giving the hot melt bond a high degree of flexibility even at low temperature. As a result of its exceptional compatibility with most elastomers, **DERTOPHENE T** is also recommended for solvent and water based adhesive formulations.

Other grades of DERTOPHENES with different softening points and hydroxyl values are also available for solving specific problems.

To order a technical datasheet, click on  column

To order a safety datasheet, click on  column
then click on "OK".

PRODUCT	SOFTENING POINT RING and BALL °C	COLOUR GARDNER 50R/50Toluene	HYDROXYL VALUE		
DERTOPHENE 1510	150	6	90-110	<input type="checkbox"/>	<input type="checkbox"/>
DERTOPHENE H 150	118	5	135-150	<input type="checkbox"/>	<input type="checkbox"/>
DERTOPHENE T	95	4	30-50	<input type="checkbox"/>	<input type="checkbox"/>
DERTOPHENE T 105	105	4	20-60	<input type="checkbox"/>	<input type="checkbox"/>
DERTOPHENE T 110	111	4	45-60	<input type="checkbox"/>	<input type="checkbox"/>
DERTOPHENE T 115	120	5	40-65	<input type="checkbox"/>	<input type="checkbox"/>
DERTOPHENE T 135	135	5	40-65	<input type="checkbox"/>	<input type="checkbox"/>

Applicant(s): KAKINUMA et al.

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EXHIBIT 1